

WHAT IS CLAIMED IS:

1. A remote seal assembly for use with a pressure transmitter coupled to a capillary tube comprising:

5 a seal body defining a cavity and having a isolation diaphragm which seals the cavity from a process fluid; and
a thermal isolation extension connected to the cavity of the seal body on a first
10 end and configured to connect to the capillary tube on a second end, the extension defining a bore extending from the first end to the second end;
wherein the thermal isolation extension is
15 configured to thermally isolate the capillary tube from the seal body.

2. The remote seal assembly of claim 1 wherein the capillary tube and the second end of the thermal
20 isolation extension are connected by a weld.

3. The remote seal assembly of claim 1 wherein the seal body further comprises:
a universal capillary connection connected to
25 the cavity and sized to receive a capillary fitting.

4. The remote seal assembly of claim 3 wherein the thermal isolation extension further comprises:

a capillary fitting disposed on the first end, the capillary fitting adapted to fit the universal capillary connection.

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5. The remote seal assembly of claim 1 wherein the thermal isolation extension further comprises:

a universal capillary connector disposed on the second end and sized to receive a capillary fitting of the capillary tube.

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6. The remote seal assembly of claim 5 wherein the capillary tube has a capillary fitting for connecting with the universal capillary connector.

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7. The remote seal assembly of claim 1 wherein the seal body and the thermal isolation extension are formed from corrosion resistant materials.

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8. The remote seal assembly of claim 1 wherein the connection between the seal body and the thermal isolation extension is a weld connection.

9. The remote seal assembly of claim 1 wherein the assembly is exposed to a bake out process.

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10. The remote seal assembly of claim 1 wherein the thermal isolation extension comprises:

a universal capillary fitting;
a universal capillary connector; and
an extension body adapted to connect the
capillary fitting and the capillary
connector, the extension body defining
a bore extending from the capillary
fitting to the capillary connector.

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11. The remote seal assembly of claim 10 wherein
the thermal isolation extension body comprises:

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an inner tube defining the bore; and
an outer sheath sized to fit around the inner
tube, the outer sheath being
sufficiently rigid to prevent undesired
bending of the inner tube.

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12. A method for producing a remote seal assembly,
the method comprising:

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forming a seal body adapted to interact with a
process fluid, the seal body defining a
cavity that is isolated from the
process fluid by a diaphragm;

forming an thermal isolation extension adapted
to mate with the seal body;

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welding the thermal isolation extension to the
seal body to form an assembly; and
exposing the assembly to a bake out process
prior to connecting to a capillary
tube.

13. The method of claim 12 wherein the step of forming the thermal isolation extension comprises:
welding a tube to a capillary fitting on a
5 first end and to a capillary connector on an second end.
14. The method of claim 12 wherein the step of forming the thermal isolation extension comprises:
10 machining the thermal isolation extension from a unitary piece of corrosion resistant material.
15. The method of claim 14 wherein the step of machining comprises:
15 cutting away material along an outer surface to reduce a thickness of the thermal isolation extension; and
drilling a bore along an axis of the thermal
20 isolation extension, the bore extending an entire length of the thermal isolation extension.
16. The method of claim 14 wherein the thermal
25 isolation extension is a pigtail tube attached to a capillary fitting.

17. The method of claim 12 wherein the seal body and the thermal isolation extension are formed from corrosion resistive materials.

5 18. A remote seal assembly formed according to the method of claim 12.

19. A remote seal assembly for use with a pressure transmitter coupled to a capillary tube comprising:

10 a seal body defining a cavity that is fluidically isolated from a process fluid by a diaphragm; and

a thermal isolation extension coupled to the cavity of the seal body, the thermal
15 isolation extension defining a bore extending from the seal body to the capillary tube;

wherein the thermal isolation extension is configured to thermally isolate the
20 capillary tube from the seal body.

20. The assembly of claim 19 wherein the thermal isolation extension has a length sufficient to dissipate heat from the seal body such that a
25 temperature of the thermal isolation extension at a connection with the capillary tube is at a low outgassing temperature.

21. The assembly of claim 20 wherein the low outgassing temperature is less than 100 degrees Celsius.

5 22. The assembly of claim 19 wherein the thermal isolation extension comprises:

a capillary fitting;

a capillary connector; and

10 a rigid tube connecting the fitting and the connector, the rigid tube defining a bore extending from the fitting to the connector and fluidically coupled to the cavity of the seal body.

15 23. The assembly of claim 19 wherein the thermal isolation extension comprises:

a pigtail tube attached to the seal body and a tube weld coupling for connecting the pigtail tube to the capillary tube.

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24. The assembly of claim 19 wherein the thermal isolation extension and the capillary tube are connected via a weld connection.